<u>Abstract</u>

Disclosed is a wheel set which comprises two wheel disks and is placed upon several support and drive rollers of a movable wheel set machine. The wheel set axle is the received between lathe centers of two tailstocks which are supported relative to each other. The position of the wheel set relative to the center of the machine is identified. A tool for machining the tire of at least one of the two wheel disks of the wheel set if first adjusted in the Z direction of the machine according to the result of the identification, the wheel set being made to rotate by means of one of the support and drive rollers. The back of the tire is subsequently planed with the aid of the tool. The planed back of the tire is supported in the Z direction, and the supported tire is profiled beginning from the front face thereof by means of a tool.